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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/852,855	05/10/2001	Raymond A. Berard	14060/198355(IRC289)	5678

23370 7590 12/06/2002

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EXAMINER
WYROZEBSKI LEE, KATARZYNA I

ART UNIT	PAPER NUMBER
1714	4

DATE MAILED: 12/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

TC-4

Office Action Summary	Application No.	Applicant(s)	
	09/852,855	BERARD, RAYMOND A.	
	Examiner	Art Unit	
	Katarzyna W. Lee	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-16 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-16 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

For newly published, proper 102(e) form paragraph the applicant is referred to the attachment at the end of this office action. As of today the form paragraphs are not yet incorporated into the software utilized by the examiners.

2. Claims 1-10, 14-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Yang (US 6,036,726).

The prior art of Yang discloses process for recycling nylon-6,6 articles such as carpets, which articles contain dyes.

According to the claim 27 of the prior art of Yang, the process includes the steps of contacting the polyamide with organic solvent at a temperature sufficient to dissolve the polyamide, separating the undissolved carpet materials and colorant, cooling the polyamide solution thereby causing precipitation.

According to the claims of the prior art of Yang, the temperature at which polyamide is dissolved is in a range of 140-220°C and the precipitation occurs by cooling the polyamide solution to temperature lower than 140°C. In specific examples, the dissolution temperatures were 140°C, 160°C and 180°C (col. 13) at a pressure of 250 psig.

In the examples the prior art of Yang utilizes solvent system, which is a mixture of alcohol and water. The alcohols include methanol, ethanol, isopropanol and butanol. Ratio of alcohol to water as disclosed in col. 13 of Yang was 60/40, 70/30, 80/20 and 90/10. There is no teaching of glycols and polyols being used. In fact the prior art of Yang teaches that a glycol was not a good solvent for the nylon-6,6 (col. 12, example 10)

Further, in Example 1 (col. 9) it is specifically disclosed, that the polyamide recovered during the process is nylon-6,6.

In the light of the above disclosure, the prior art of Yang anticipates the requirements of claims rejected above.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 10, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang (US 6,036,726) in view of Meyer (US 4,334,056).

The discussion of the disclosure of the prior art of Meyer from paragraph 2 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of the prior art of Meyer is the recitation of narrower temperature range capable of dissolving and precipitating the polyamide.

With respect to the above differences, the prior art of Meyer discloses process for making polyamide powders by dissolving the polyamide polymer in ethanol at a temperature range of 130-150°C and then cooling it to afford precipitation at a temperature range of 100-125°C. The precipitated polyamide is then recovered from the ethanol (claim 1).

According to the col. 3 of the specification of the prior art of Meyer, the polyamide that can be processed by the process disclosed above can be formed from monomers such as adipic acid and hexamethylene diamine, wherein the two monomers are utilized to form nylon-6,6.

In narrower embodiment, the prior art of Meyer discloses that the temperature range at which the polyamide dissolves is 138-142°C. Since the present invention teaches about 145°C, then the temperature of 142°C reads on present claims in view of the term "about".

The temperature at which ethanol can dissolve polyamide is property of ethanol solvent system and polyamide itself. Therefore if the same solvent system is utilized in a process with the same type of polymer, then the same temperature ranges should apply.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize temperatures of the prior art of Meyers in the process of Yang and thereby obtain the claimed invention. Utilizing lower temperatures to dissolve polyamide in ethanol and precipitate polyamide from ethanol are shown to work efficiently to obtain particulate polyamide. In addition the temperature ranges of the prior art of Yang overlap with the temperature ranges of Meyers.

6. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang (US 6,036,726) in view of Booij (US 5,840,773).

The discussion of the disclosure of the prior art of Meyer from paragraph 2 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of the prior art of Meyer is the recitation of narrower temperature range capable of dissolving and precipitating the polyamide.

With respect to the above differences, the prior art of Booij discloses process for recycling polyamide from carpet scrap containing nylon-6 and nylon-6,6.

The process of Booij according to the claims of the prior art the solvent utilized to dissolve the polyamide is alcohol selected from the group consisting off methanol, ethanol and propanol. In narrower embodiment (claim 3) this alcohol is mixed with water.

The temperature at which the nylon-6,6 is dissolved is in a range of 135-140°C (claim 13) or 155-165°C (claim 17). According to the example III, the solution was cooled to 25°C to precipitate the white polyamide powder.

The temperatures of the alcohol/water mixture can be as low as 135°C and still effectively dissolve the polyamide.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize temperature range of the prior art of Booij to dissolve the polyamide of Yang and thereby obtain the claimed invention. Utilizing the temperatures of Booij would still dissolve the nylon-6,6 of Yang. In addition the temperature ranges of the prior art of Yang overlap with the temperature ranges of Booij.

7. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang (US 6,036,726) in view of Stott (US 2,742,440).

The discussion of the disclosure of the prior art of Yang from paragraph 2 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of the prior art of Yang is the presence of inert gas.

With respect to the above difference the prior art of Stott discloses process, which includes steps of dissolving the polyamide in alcohol and water at elevated temperatures. The polyamide is cooling precipitates polyhexamethylene adipamide, which is also known as nylon-6,6. The alcohols are selected from methanol, ethanol and propanol.

The process of the prior art of Stott is conducted in closed container and under nitrogen. Presence of higher pressures is therefore obvious, since the temperatures are higher, additional component (nitrogen gas) is introduced and the container is closed.

Introduction of nitrogen not only increases pressure but it also provides non-oxidizing atmosphere during dissolution and precipitation of the nylon. Oxidation of nylon would degrade the polymer.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to conduct the process of Yang under inert atmosphere as it is disclosed in Stott and thereby obtain the claimed invention. Utilizing inert atmosphere would prevent oxidation of polyamide and thereby it would prevent polymer degradation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katarzyna W. Lee whose telephone number is (703) 306-5875. The examiner can normally be reached on Mon-Thurs 6:30 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (703) 306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Katarzyna Wyrozebski Lee
KIWL
December 3, 2002

Recent Statutory Changes to 35 U.S.C. § 102(e)

On November 2, 2002, President Bush signed the 21st Century Department of Justice Appropriations Authorization Act (H.R. 2215) (Pub. L. 107-273, 116 Stat. 1758 (2002)), which further amended 35 U.S.C. § 102(e), as revised by the American Inventors Protection Act of 1999 (AIPA) (Pub. L. 106-113, 113 Stat. 1501 (1999)). The revised provisions in 35 U.S.C. § 102(e) are completely retroactive and effective immediately for all applications being examined or patents being reexamined. Until all of the Office's automated systems are updated to reflect the revised statute, citation to the revised statute in Office actions is provided by this attachment. This attachment also substitutes for any citation of the text of 35 U.S.C. § 102(e), if made, in the attached Office action.

The following is a quotation of the appropriate paragraph of 35 U.S.C. § 102 in view of the AIPA and H.R. 2215 that forms the basis for the rejections under this section made in the attached Office action:

> **A person shall be entitled to a patent unless –**
>
> **(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.**

35 U.S.C. § 102(e), as revised by the AIPA and H.R. 2215, applies to all qualifying references, except when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. For such patents, the prior art date is determined under 35 U.S.C. § 102(e) as it existed prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. § 102(e)).

The following is a quotation of the appropriate paragraph of 35 U.S.C. § 102 prior to the amendment by the AIPA that forms the basis for the rejections under this section made in the attached Office action:

> **A person shall be entitled to a patent unless –**
>
> **(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.**

For more information on revised 35 U.S.C. § 102(e) visit the USPTO website at www.uspto.gov or call the Office of Patent Legal Administration at (703) 305-1622.